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On the similarities of the prompt gamma-ray emissions in Short and Long Gamma-Ray Busts AMIR SHAHMORADI, Univ of Texas, Austin — Gamma-Ray Bursts (GRBs) are intense short pulses of low-energy (keV-MeV) gamma rays – the so-called "prompt emission" – followed by afterglow radiation in X-ray, optical, infrared or radio wavelengths. Extensive evidence has been accumulated over the past two decades pointing to at least two separate classes of Long and Short GRBs with different progenitors: death of supermassive stars and compact object binary mergers respectively. Despite having different progenitors, here I show that the prompt gamma-ray emissions from both classes of GRBs exhibit highly similar features and correlations, possibly indicating a unified mechanism for the generation of the observed correlations among the gamma-ray spectral and temporal parameters of both classes of GRBs. I highlight similar correlations that are also observed in Blazars' spectral energy distributions (SED) and discuss the potential effects of observational biases on these relations and their implications for the theoretical models of GRB prompt emission.

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